

# CS Web Portal – Finding a Framework

Matt Wayment

*Advisors:*

Prof. Robert Kessler

Nathan Dykman

# Overview

- CS Student Web Portal
  - Developed on and maintained by sophomore class
    - Each new year will add-on and maintain
  - Used by entire CS Department
    - Students
      - Handing in assignments, viewing class data
    - Professors
      - Building class pages, communicating with students
    - Teachers Assistants
      - Grading Assignments

# Thesis Topic

- Finding optimal portal framework that accomplishes two key objectives:
  - Extensible and easy enough to use that sophomore students can develop within framework and learn good principles while doing so
  - Feature set that is ideal for a university student portal

# What is a Web Portal?

- Centralized location of web information
- Personalized to a users needs
- Community Interaction
- Content aggregation from different sources
- Broad range of resources and services
  - Single sign-on, navigation, message boards, user management, search, links



# Examples of Portals

- Google, Yahoo, CNET.com, My.Utah.edu

The screenshot shows the My.Utah.edu portal homepage. At the top, there is a navigation bar with links for Email, WebCT, Campus Information System, U-Online, My Account Tools, My Bookmarks, and My Event Calendar. The main content area is divided into several sections:

- Left Sidebar:** Contains navigation links for News & Announcements, Academics, Libraries & Research, Services, and Campus Life. Below these are sections for My Pages (None Created), Create My Pages, Change Portal Look and Feel, and a list of links including U of U Home Page, Bookstore, Catalog & Class Schedules, Tuition & Fees, U Map, and U Directory.
- University Announcements:** A section titled "U Announcements" with the text "No Announcements."
- Welcome to UMail!** A section promoting UMail, including a link to "Activate your UMail Account Now!" and information about UMail Outlook Web Access. It includes links for logging in, learning more, and frequently asked questions.
- Portal Tips:** A section titled "Did you know..." with a tip about buying books online from the University bookstore. It includes links for "See all tips", "Make My.Utah.edu my home page", "Report an Error", and "Got a suggestion?".
- Academic Deadlines:** A section titled "Academic deadlines for the Spring 2006" with a table showing dates and events.
- U of U Weather:** A section showing the current temperature (44.1° F / 6.0° C), wind (6ms / 3kts S), and a five-day forecast for Wednesday (Partly Cloudy, 70 / 45) and Thursday (Mostly Sunny, 73 / 46).
- Ute Scoreboard:** A section at the bottom right.

# Motivation for CS Portal

- Development opportunity for sophomores
  - Team environment
  - Develop on existing code-base
  - Long life-cycle
- Benefit users
  - Simplify making class web pages
  - Easy for students to navigate

# What is a Portal Framework?

- Infrastructure that portal is built on top of
  - Set of technical specifications and software
  - Portal Server with interfaces for customization
- Often provides core set of reusable components
- Support for personalization and single sign-on
- Modular and extensible
- Integration Support

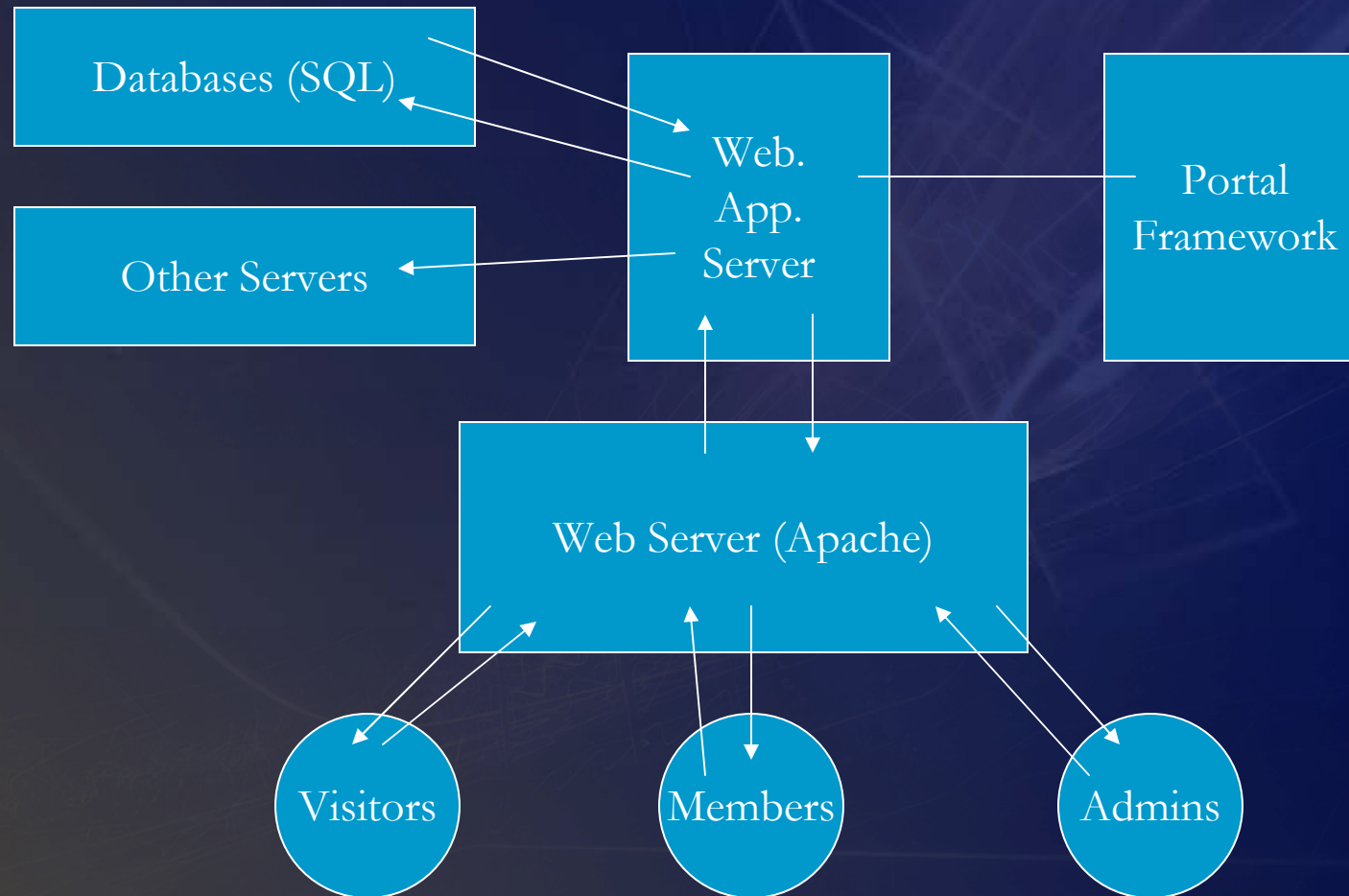


# Existing Portal Frameworks

Portal Framework	URL
Liferay 3.6.1	<a href="http://sourceforge.net/projects/lportal">http://sourceforge.net/projects/lportal</a>
Zope	<a href="http://www.zope.org/">http://www.zope.org/</a>
uPortal (JA-SIG)	<a href="http://www.ja-sig.org/">http://www.ja-sig.org/</a>
Apache Jetspeed-2	<a href="http://portals.apache.org/jetspeed-2/">http://portals.apache.org/jetspeed-2/</a>
JBoss Portal	<a href="http://www.jboss.com/products/jbossportal">http://www.jboss.com/products/jbossportal</a>
OpenCMS	<a href="http://www.opencms.org/opencms/en/index.html">http://www.opencms.org/opencms/en/index.html</a>
MetaDot	<a href="http://www.metadot.com/index_static.html">http://www.metadot.com/index_static.html</a>
Pluto	<a href="http://portals.apache.org/pluto/">http://portals.apache.org/pluto/</a>
Gridsphere Portal	<a href="http://www.gridsphere.org/gridsphere/">http://www.gridsphere.org/gridsphere/</a>
DotNetNuke	<a href="http://www.dotnetnuke.com/">http://www.dotnetnuke.com/</a>
IMB WebSphere	<a href="http://www.ibm.com/websphere/portal">http://www.ibm.com/websphere/portal</a>
Microsoft Sharepoint	<a href="http://www.microsoft.com/.../sharepoint/default.aspx">http://www.microsoft.com/.../sharepoint/default.aspx</a>



# Portal Architecture



# Effort Details

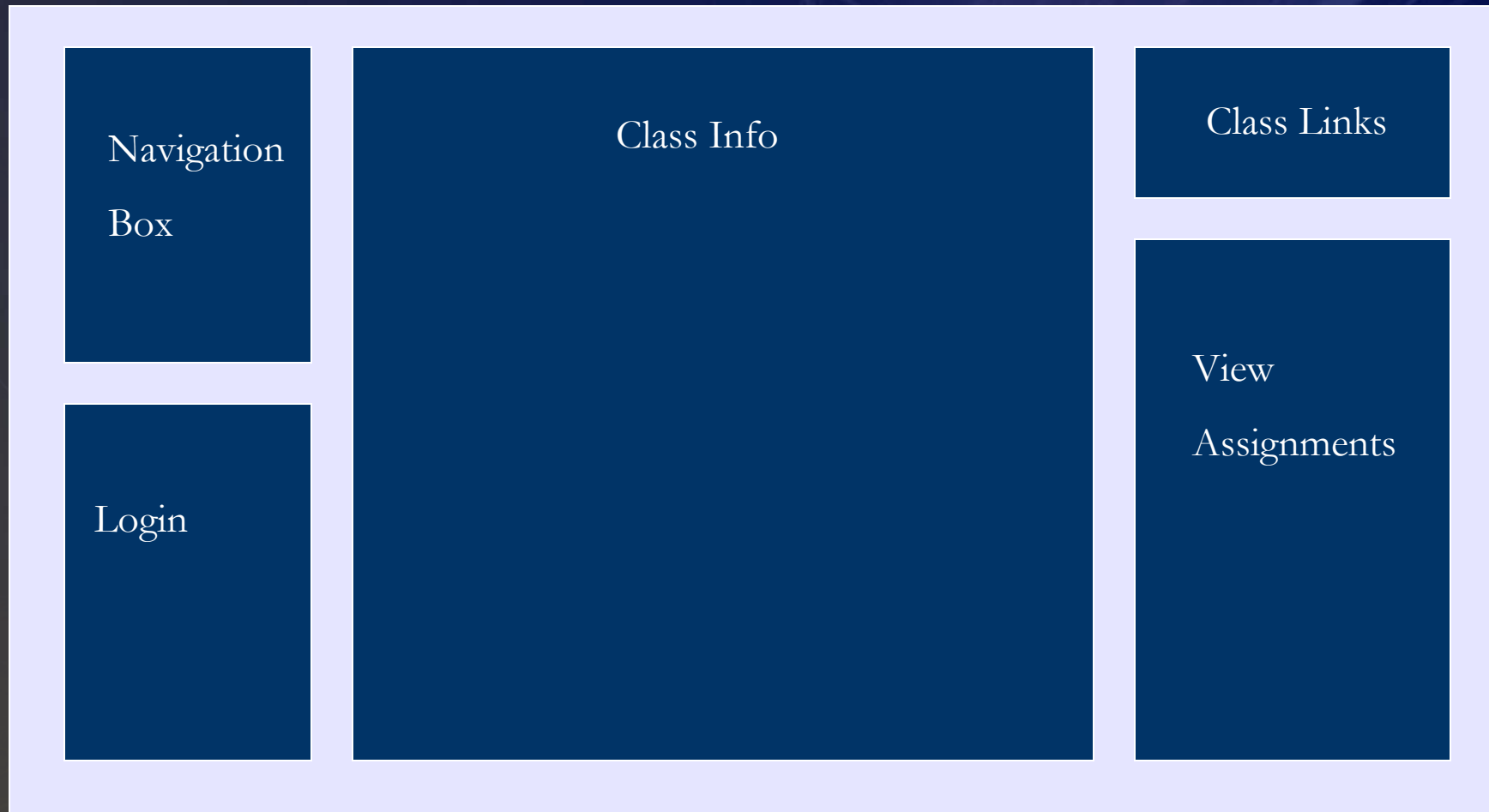
- Selecting Frameworks
  - Select top four frameworks to build sample portals
- Designing a sample portal
  - Serve as proof-of-concept
- Constructing Portals
  - Develop sample portal in each framework
- Finalize Thesis

# Selecting Frameworks

- After researching existing portal frameworks, select four to build sample portal
- Pick frameworks that leverage different technologies (JAVA, .NET, portlets, etc.)
- Select frameworks best-suited for project
  - Ease-of-Use, Extensibility, Modular
  - Secure



# Designing a Sample Portal



# Constructing Portals

- Build sample portal according to design specification in each of the selected portal frameworks
  - Initially install framework and framework container (server)
- Develop and unit test each module
- Black-Box test portal after completion to ensure it is end-user friendly

# Finalize Thesis

- Put finishing touches on thesis paper
- Compare/Contrast development experience and feature set of each selected framework
- Make a recommendation based on research and development experience



# Related Work

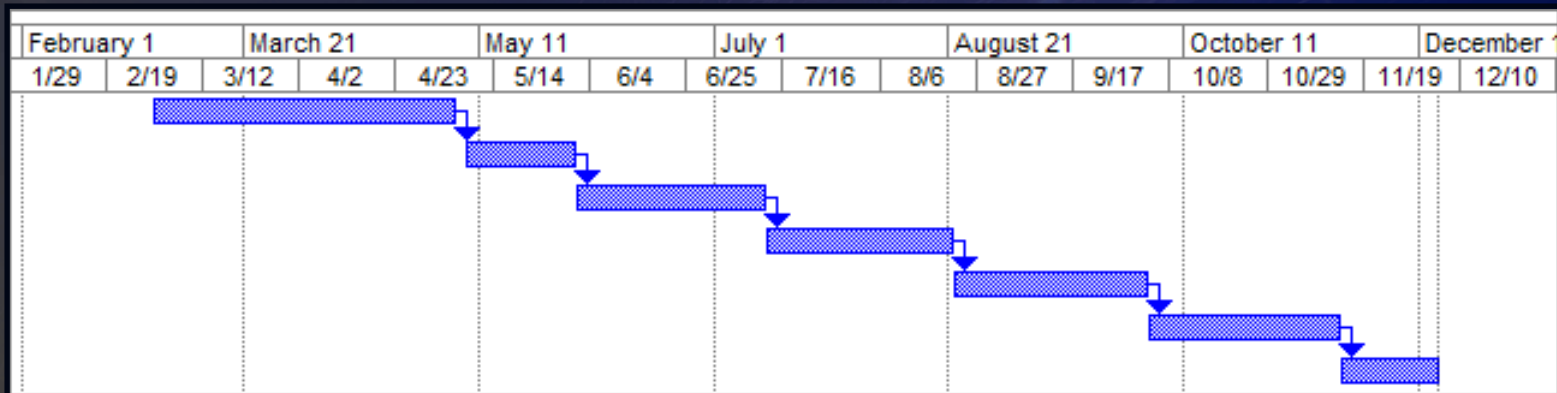
- Naval Postgraduate School – Web Portal Design, Execution and Sustainability for Naval Websites and Web Services
  - Masters thesis to evaluate how portals would work for Navy infrastructure
- Developing a student web portal at the University of Bristol
  - Ongoing project to develop university portal

# Related Work Cont.

- Building a university portal, the SCWEIMS experience
  - Selecting best portal software for university portal
- University of Pretoria, Design and Development of an Academic Portal
  - Design and development of an academic portal
- Developing a portal at the University of Georgia
  - Create centralized student web portal

# Schedule

ID	Task Name	Duration	Start	Finish
1	Research of Existing Portal Frameworks	48 days?	Wed 3/1/06	Fri 5/5/06
2	Design of Sample Portal	18 days?	Mon 5/8/06	Wed 5/31/06
3	Portal #1 Construction	30 days?	Thu 6/1/06	Tue 7/11/06
4	Portal #2 Construction	30 days?	Wed 7/12/06	Mon 8/21/06
5	Portal #3 Construction	30 days?	Tue 8/22/06	Mon 10/2/06
6	Portal #4 Construction	30 days?	Tue 10/3/06	Mon 11/13/06
7	Finalize Thesis	15 days?	Tue 11/14/06	Mon 12/4/06





# Successful End

- Able to determine which framework is best-suited and why
- CS student web portal is launched and students/faculty benefit from it

**Questions?**